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ABSTRACT

Research on the effectiveness of literacy instruction of bilingual children is reviewed. Most research on reading in a bilingual setting involves college students in the United States or younger students in other countries, while research on writing in a bilingual setting is only beginning to emerge. The review focuses on the nature of literacy, reading, writing, and the interface between reading and writing. Specific topics include: the distinction between oral and written language, language and context, learning to read and write, factors contributing to the acquisition of literacy, the relationship of first language literacy to acquisition of second language literacy, transfer of skills across language, second language oral proficiency and reading achievement, and teaching practices and materials. In conclusion, literacy involves language which moves beyond the scope of interpersonal communication with its contextual cues. For children whose second language is not English, initial literacy instruction in the native language may provide the necessary basis for acquiring literacy in English. Extensive references are included. (RW)

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LITERACY INSTRUCTION IN BILINGUAL SETTINGS: A SYNTHESIS OF CURRENT RESEARCH

Betty J. Mace-Matluck

INTRODUCTION

Most researchers and practitioners alike would agree that learning to read and write is a complicated process, that many cognitive prerequisites are involved in that process, and that each year large numbers of monolingual children with varying degrees of each of these requisites on entry into first grade do learn to read, and to some extent to write, within a relatively short time. At entry age, these children have, to one degree or another, certain cognitive skills: (1) They can speak and understand some form of oral language; (2) they can distinguish between similar and dissimilar shapes; (3) they can match words that rhyme; (4) they can recognize some letter shapes and some printed words; (5) they know some letter-sound relationships; and (6) they know how to represent graphically some objects and perhaps even some letters and words.

Similarly, "bilingual" children come to school with much the same cognitive skills and in much the same varying degrees. However, bilingual children are not a homogenous group, and one simply cannot generalize about them as if they were. They differ from each other in many, many ways: (1) In their degree of bilingualism; (2) in ways in which both languages have been acquired; (3) in the sequence of that acquisition; (4) in ways in which both languages are used in various domains; and (5) in their experiences, both in and out of school, in dealing with print (Matluck & Mace-Matluck, 1981). Moreover, of those students who experience difficulty in learning to read and write in school today, an overwhelming majority are from low-income families, from certain ethnic backgrounds, or from homes where English is a second language; these are children who are not in the mainstream of American society. What is it in the life (or school) experiences of these children that predicts failure, rather than success, in learning to read and write? What research do we have that can guide educators in their efforts to provide effective literacy training for children in the United States whose first language is not English?

Unfortunately, much of the research available on reading in a bilingual setting has been conducted either primarily on college-level populations within the United States, or has been carried out on younger populations in other countries. However, these studies are not completely irrelevant to issues facing education in this country. In addition, there are a number of studies now underway on preschool and school-aged bilingual populations in the United States which offer promise. Some of these are beginning to report (e.g., Goodman & Goodman, 1978; Fishman, 1980; Peña, 1980; Rodríguez-Brown, 1980; Teale, Estrada, & Anderson, in press; Anderson, 1981; Trager, Brisk, Indresano, & Lombardo, 1981; and our own studies at the Southwest Educational Development Laboratory reported by Mace-Matluck, 1980; Mace-Matluck & Matluck, 1980; Mace-Matluck, Hoover, & Domínguez, 1981; Matluck & Mace-Matluck, 1981; Hoover, Mace-Matluck, & Domínguez, 1981).

Research on writing in a bilingual setting has only just begun to emerge. In fact, research on the process of writing (i.e., how people learn to write) even in monolingual settings is a recent phenomenon. Nonetheless, studies in the last decade on the development of writing in children have produced extraordinarily fruitful results (Graves, 1979a, 1979b, 1980, 1981; Rentel, King, & Pappas, 1979; Sowers, 1979a, 1979b; Florio & Clark, in press; Clark, Florio, Elmore, Martin, & Maxwell, in press; Calkins, 1980; King, 1980; De Ford, 1980). Work by these researchers and others, as well as that by Edelsky (1981a, 1981b) with bilingual children, offers some insight into how children acquire writing skills and are suggestive of ways in which the teaching and learning of critical skills might be improved in bilingual programs.

In this paper I shall discuss some of the areas of current research which would appear to hold some promise for improving the teaching of literacy to bilingual children: (1) Research which focuses primarily on reading; (2) the interface between reading and writing; (3) an analysis of the existing research on writing. However, a prior examination of the

nature of literacy and some of its antecedents is a necessary introduction to such a discussion.

THE NATURE OF LITERACY AND SOME OF ITS ANTECEDENTS

Oral vs. Written Language. The term "literacy" is generally associated with the written form of language, and, because it usually develops later than the spoken form, it is viewed by some as an extension of one's oral skills. When we speak of literacy skills, we are generally referring to those behaviors known as reading and writing. These are seen as parallel processes to speaking and listening. That is, in writing, as in speaking, the language user draws upon syntactic, semantic, discoursal, and logical devices to encode (convey) the message; in reading, as in listening/ comprehending, the receiver of the message must use the same devices to decode and interpret that message. However, this is not to say that those syntactic, semantic, discoursal, and logical devices used to convey and receive messages in the written mode are identical to those of the oral mode. This is an important distinction for consideration in the teaching of reading and writing and one which is getting increasing attention in the literature on literacy.

Oral language, or the language of utterance, is described by Olson (1977) as the language of face-to-face, interpersonal communication; it is supported by contextual and paralinguistic information which provides a wide range of cues as to the intentions of the speaker. On the other hand, written language, or language of text, is the language of abstract ideas. Of necessity it is highly conventionalized; contextual and paralinguistic cues are greatly reduced. The linguistic forms, therefore, must in and of themselves contain all of the information relevant to the communication. Olson (1977) points out that the child comes to school with oral language; the school experience teaches the child to deal with written text. He states, "Schooling, particularly learning to read, is the critical process in the transformation of children's language from utterance to text" (p. 278).

Another view of language, of considerable importance to the teaching of literacy, is one offered by Calfee and Freedman (1980). They draw a distinction between "formal" and "natural" language: Formal language is characterized as being highly explicit, context free, repeatable, memory-supported, and logical-rational, whereas natural language is described as quite the opposite--highly implicit-interactive, context bound, unique, idiosyncratic, personal, intuitive, and sequential-descriptive. Calfee and Freedman maintain that it is not writing versus speech which is the critical issue (since natural and formal language exist in both the oral and written modalities), but rather it is the style or level of formality in the message which characterizes two distinct modes of language and thought. They point out, for example, that "Letters between lovers resemble natural language; a conversation between business associates is most often like formal language" (p. 5). Relating this concept to schooling, these authors argue that children, having been raised in the informal, intimate language of the home, come to school with linguistic skills characteristic of "natural" language and that it is the "formal" language that is, or should be, the content of education since it is this form of language that is used in oral discourse in the classroom and in the textbooks of school.

Language and Context. Other scholars studying the relationship between language and thought have also discussed the use and interpretation of language in different contexts. They have drawn a distinction between, on the one hand, the use and interpretation of language in face-to-face communication, and on the other, language that is used autonomously, without paralinguistic cues. Similar to Olson's "utterance" vs. "text" and Calfee and Freedman's "natural" vs. "formal" distinction are those made by Bruner (1975) between "communicative competence" and "analytic competence," by Donaldson (1978) between "embedded" and "disembedded" thought and language, and by Cummins (1980) between "basic interpersonal communication skills" and "cognitive/academic linguistic proficiency." In each case, language used in situations where it is supported by

contextual and paralinguistic cues is described as being "less dependent on the specific linguistic forms used for its interpretation than it is on the expectation and perception of the speaker's intentions and the salient features of the context" (Swain, 1981). In contrast, language and thought (which moves beyond the bounds of meaningful interpersonal context) is believed to make entirely different demands on the individual and requires the user to focus on the linguistic forms themselves for meaning, since meaning is autonomously represented and contextual support is greatly reduced. The linguistic message must, therefore, be elaborated precisely and explicitly, whether in the oral or written form.

To a considerable extent, formal education is concerned with teaching the child to process and to produce those varieties of spoken and written language in which meaning is autonomously represented. Language development as described by Olson (1977) is "primarily a matter of mastering the conventions both for putting more and more of the meaning into the verbal utterance and for reconstructing the intended meaning of the sentence per se" (p. 262). Learning to read and write facilitates this process, and in learning to read and write, the child is made conscious of the processes by which language is controlled and manipulated to explain, to classify, to generalize, to abstract, to gain knowledge, and to apply that knowledge (Swain, 1981). The acquisition of literacy skills requires children to gradually extend their ability to rely primarily on linguistic cues for meaning and less on situational and paralinguistic cues. Learning to deal with language in this manner is essential for success in reading and writing. Yet, it is a developmental process and extends over a rather long period of time for some children.

Cummins (1981) has recently proposed a theoretical framework which appears very useful for (1) examining how individuals acquire reading and writing skills in the first language, and (2) interpreting the data on how second language learners of varying degrees of proficiency

perform on tasks of reading and writing in English. He postulates two dimensions of language proficiency relevant to the educational setting, on which an adequate conceptualization of linguistic proficiency depends. Each dimension is portrayed as a continuum.

One dimension is related to the use and interpretation of language in different contexts. This dimension involves the range of support available for expressing and receiving meaning. At one end of the continuum is "context-embedded use of language" (i.e., language which is supported by a wide range of meaningful paralinguistic and situational cues); at the other extreme is "context-reduced use of language." At that end of the continuum the participants must rely primarily or exclusively on linguistic cues.

The second dimension of Cummins' model of linguistic proficiency addresses the developmental aspect of communicative competence in terms of the degree of active cognitive involvement needed to carry out a particular activity or task. Active cognitive involvement is conceptualized in terms of the amount of information that must be processed simultaneously or in close succession in order to carry out the task. When linguistic tools are automatized (mastered), less cognitive involvement of an active nature is needed, thus more energy is released for higher level tasks. For example, when children are in the process of acquiring writing skills, much cognitive energy is involved in simply holding the pencil and forming the letters. As these skills are mastered, more energy is released for higher level discourse.

Cummins (1981) has proposed that communication tasks for which the individual has not mastered the linguistic tools will fall along the cognitively-demanding portion of the continuum and that:

> In these situations, it is necessary to stretch one's linguistic resources (i.e., grammatical, sociolinguistic, discourse and strategic competencies) to the limit in order to achieve one's communicative goals. Obviously cognitive involvement, in the sense of amount of information processing, can be just as intense in context-embedded as in context-reduced activities. (p. 14)

Learning to Read and Write. As suggested earlier in this paper, a major role of the school is to teach children to read and to write, to deal with abstract ideas, and to express their thoughts in a comprehensible manner. For the preliterate child, the task of learning to read and write (i.e., deal with context-reduced use of language) will fall along the cognitively-demanding portion of Cummins' continuum. For some children whose skill in using formal language is somewhat limited, the task of learning to organize and express their ideas in an oral report, to present an argument, or to understand and respond to the classroom instructions given orally by the teacher may also fall toward the cognitively-demanding portion of the continuum even though these activities may move closer toward context-embedded use of language. Similarly, for the second-language child, all tasks in English may well be cognitively-demanding, depending upon the level of the child's proficiency in English and the extent to which she/he knows how to deal with context-reduced language. Cummins (1980) has argued that the abilities on which the use and interpretation of context-reduced language depend are cross-lingual and that learning to gain and apply knowledge using language alone is not limited to the language in which it was acquired but represents a linguistic resource that can be drawn upon when developing school-related skills in another language. In other words, learning to read and write in one language facilitates the development of literacy skills in another.

Over the past decade a number of studies have examined the miscue patterns of bilingual children from a variety of home language backgrounds as they read in two languages and have concluded that reading is a single process. Strategies used by the children when reading in one language are usually evident when reading in the other. These studies have also provided evidence that children draw upon their knowledge of the structure of the oral language as well as their life experiences to decode and interpret written text (Goodman & Goodman, 1978; Chu-Chang, 1979; Eaton, 1979; Silva, 1979; Matluck & Mace-Matluck, 1980; Berrera, 1981; Hodes, 1981; Hudelson, 1981; Mott, 1981; Romatowski, 1981).

In learning to read, children appear initially to rely rather heavily on a single strategy (e.g., letter-sound relationships or context cues) and to gradually add others. Regardless of the strategy used initially, children do not appear to gain independence in reading in either their first or second language until two or more strategies are acquired (Rodríguez-Brown, 1980; Mace-Matluck & Matluck, 1980; Matluck & Mace-Matluck, 1981).

One recent study has looked at the miscue patterns of bilingual children who score differentially on a test of field dependence/field independence (Eaton, 1980). This study found that children oriented toward field independence actively attempted more words than children oriented toward field dependence; they also made more word-for-word substitutions, fewer omissions, and greater use of graphic cues.

Factors Contributing to Acquisition of Literacy. Since mastery of literacy is such an important part of schooling, the antecedents of success in learning to read and write are of particular interest. Perhaps one of the most important studies to have been reported recently is a longitudinal study of first language acquisition of preschool children in England (Wells, 1981a). Since 1971, Wells and his colleagues have studied systematically the way a group of young children has learned to communicate through language, first at home through speech and then through the written language when they start school. They found that the rate of the children's oral language development was strongly influenced by the quality of the conversation they experienced during early childhood, and that the quality of the interaction between children and their caretakers was not determined by social background.

The most important predictor of attainment in reading after two years of schooling was the extent of the children's understanding of the conventions of print on entry into school. This knowledge about print was strongly predicted by the extent to which parents shared their own

interest in literacy with their children and by the quality of interactions with their children. Relating spoken language development to reading, Wells (1981b) concluded:

> While command of spoken language is indeed important for success in school, it is not in itself sufficient for a child to benefit from the more formal learning contexts of the classroom. What seems to be required is familiarity with the ways in which language can be used symbolically to represent remote, imaginary, or even hypothetical, events and experiences, and these are primarily associated with the written language. (p. 2)

Findings from this study support the view that the acquisition of literacy involves the extension of the use of language beyond that of interpersonal communication within a context-supported environment to include being able to use and interpret language in context-reduced situations. They further suggest that the quality of the child's interactions with adults, in relation to both oral and written language, influences that ability.

A study presently underway with U.S. preschool children is investigating how young children interact with written communication (Teale et al., in press; Anderson, 1981). Low-income children from Anglo, Black, and Mexican-American families are being observed to determine factors which seem to promote literacy development and to examine those factors in terms of consequences for family and community practices.

On the basis of their first year data, Teal and his colleagues have observed that one cannot generalize about the literacy background of children from low-income families. The home literacy environments of the children in the study vary widely in terms of the amount and type of literacy materials in the home as well as in the frequency with which children experience literacy events. Income does not appear to be the factor which determines the child's literacy experience; rather, it is a complex array of interdependent factors which affect the literacy

socialization of young children. Important among these are the amount and type of literacy materials present in the community as well as in the home, and role, or function (e.g., utilitarian vs. relaxation/ pleasure), which literacy is given in these two contexts. The quality of the literacy environment also appears to be important. For example, development is influenced by the type of literacy in which the parent engages the child, the extent to which the activity provides a "learning" experience for the child, and the extent to which the child has positive feelings about the experience.

An additional area of interest included in the study is the relationship which may hold between the use of literacy materials and particular cultures. Teale and his associates are interested in knowing if similarities and differences exist across cultures on a variety of dimensions (e.g., activities engaged in, participant structures, types of materials selected and used). Their work is proceeding in that direction.

Another study just getting underway is investigating the relationship between the kind and amount of literacy events experienced in early childhood by a selected group of Mexican-American and Anglo children and initial success in reading (Hernández-Chávez, 1981). The study is testing two hypotheses:

1. The kind and amount of literacy socialization will show a clear relationship to levels of development of children's conceptualization of print.

2. Reading socialization and graphic sense will be a more valid measure of children's readiness to begin instruction in reading than "traditional measures" of readiness to read.

Findings from this study are expected to be available within the next year or so.

On traditional measures of reading readiness, some interesting findings are emerging relative to bilingual children. In the SEDL Bilingual Reading Research, a longitudinal study now in its fourth year, bilingual Mexican-American kindergarten children were administered a traditional foundation skills measure in both English and Spanish. Their performance demonstrated that many of those children could perform successfully on visual discrimination and linguistic awareness tasks that are associated with success in initial reading (Mace-Matluck et al., 1980). A subsequent study was conducted on a subsample of the same children in first grade. The study was designed to investigate the relationship between an early Fall assessment of foundation skills and a following late Spring assessment of reading achievement. The study revealed that most of the children at the beginning of first grade possessed sufficient skill in both languages on the reading readiness components assessed that they would likely profit from reading instruction. For the English version of the readiness instrument, letter naming was found to be predictive of early reading achievement, as was phonetic segmentation, but to a lesser degree. In contrast, neither letter naming nor phonetic segmentation proved predictive of early reading achievement in Spanish. It was found, however, that metalinguistc skills reflected in the phonetic segmentation task and in the decoding of synthetic words appeared to be transferable across languages. That is, the children who could successfully perform those tasks in one language could also perform them successfully in the other. Decoding skills relative to "real" words also appeared to be transferable across languages as well.

Contrary to popular opinion, many children can, and do, begin to learn to read and to write long before they enter school. The antecedents of literacy originate at birth and are nurtured in the preschool years by a rich linguistic environment. There is considerable evidence that some children, monolingual and bilingual alike, can profit from literacy instruction and can acquire certain aspects of reading as early as the age of two. Andersson (1981) provides a cogent discussion

of preschool biliteracy and offers evidence that children from diverse language backgrounds (e.g., Swedish, Korean, English, Spanish) often are ready to read long before they enter school.

RESEARCH ON READING

Relationship of Literacy in the First Language (L1) to the Acquisition of Literacy in a Second Language (L2)

Positive results of the immersion programs in Canada in teaching children to read initially in a second language are well known, and examples are readily available from other parts of the world where children, as a matter of course, are successful in learning to read initially in a language which is not their mother tongue. However, as Cummins (1981), Tucker (1979), Skutnabb-Kangas (1981) and others have argued, there are sociocultural factors as well as linguistic ones that dictate the choice of the mother tongue as the initial language of literacy for language minority groups within certain environments. They maintain that in contexts where the social milieu creates ambivalence or hostility on the part of the minority group toward the majority cultural group, and insecurity toward the minority language and culture, children from the minority group tend to do poorly in school. In these contexts, they argue, use of the minority language in the instruction of the school promotes minority students' academic progress by validating the cultural identity of the students, as well as that of the community, thereby reducing their ambivalence toward the majority language and culture.

There is some evidence from research on U.S. populations to support the thesis that children and adults who learn to read first in their non-English mother tongue find it easier to learn to read successfully in English, and that skills acquired in first language reading do indeed transfer to reading in a second language. Troike (1978) reviewed 12 evaluations and several research studies in which bilingual instruction was found to be more effective than English-only instruction in

promoting English reading skills. Similarly, Rodríguez-Brown (1980) also noted that limited-English-speaking children instructed bilingually made greater gains in English reading over the span of a school year than did groups of similar children who were instructed in English only. Goodman and Goodman (1978) found in their study of second, fourth, and sixth grade students from four language groups (Spanish, Arabic, Samoan, Navajo) that students who were literate in their home language found it easier to learn to read English than did preliterate bilinguals.

A student's ability to read in the first language may also be reflected in her/his ability to read in the second language. In a study recently completed in the Boston Public Schools, Tregar et al. (1981) found a moderate correlation between reading scores in Spanish and those in English of their Spanish-English bilingual students in grades three through eight. However, one's ability to read in a second language may well be affected by the level of proficiency one has achieved in that language. For example, Alderson et al. (1977) found a low correlation between reading test scores in the first language and those in the second language of college students enrolled in a general English course. He reported that two texts read by his subjects appeared to be different (one easy and one hard) when read in the mother tongue, but that the difference disappeared when the "easy" and "hard" texts were read in the second language; the second-language text was difficult to read, regardless of the difficulty level of the text. He concluded that the problem of reading in a foreign language is greater than any conceptual or linguistic difficulties that might exist in one text and not in the other. Two other studies support his conclusion. When reading in a second language, good readers in a mother tongue may revert to poor reading strategies in the second language because of less competence in the language (Cziko, 1980; Clarke, 1981). Findings from this set of studies suggest that even though a person is literate in the mother tongue, there is a minimal competence one must reach in the second language in order to be a competent reader in the language. That is, there appears to be a competence ceiling which effectively prohibits

the complete transfer of first language reading skills to reading in the second language.

Transfer of Skills Across Languages. One often hears statements that suggest that if bilingual children are taught to read in one language, they can, and often will, without further instruction, transfer that knowledge and skill to reading successfully in the other language. However, in order for transfer of learning to occur, certain conditions must be met. First of all, the knowledge or skill possessed must be generalizable to the new situation; just as importantly, the person involved must perceive the applicability or utility of the knowledge or skill in the new situation (Gibson & Levin, 1975). In commenting on the transfer of learning within a bilingual setting, Moll et al. (1981) state that there is:

> . . . a large and growing body of literature showing that learning is primarily situation specific; generalizability to other situations depends upon whether the environment is organized to provide similar features that will facilitate its applicability to a different setting. (p. 37)

Moll and his colleagues maintain that lesson environments, particularly as they relate to participant structures, will have to be constructed in such a way that what children learn in Spanish reading class, for example, will be perceived as applicable in the English class and vice versa.

While some aspects of language and written text are language and culture specific and will have to be learned in the process of becoming a competent reader in the new language (the structure of the language, for example), there are universals in reading that hold across languages which use the same writing system. These are transferable. In addition to the transfer of general strategies involved in the reading process (Thonis, 1970; Cziko, 1976) and of general habits and attitudes (Liu, 1979), some recent studies have demonstrated the cross-lingual transfer of knowledge of text structure and of certain rhetorical devices that

are unique to specific texts. For example, it has been demonstrated that once children have learned the story grammar of narratives in one language, they are able to transfer that knowledge to comprehending and retelling narratives in another (Calfee, in press; Mace-Matluck & Hoover, 1980). Rhetorical devices, such as implicit and explicit definitions, are recognized by advanced English as a Second Language (ESL) students in a similar manner to native English-speaking students if they have been exposed to technical writings in their first language (Flick & Anderson, 1980).

Relationship of Oral Language Proficiency in the Second Language to Reading Achievement in the Second Language. The few studies which exist that have examined the strength of the relationship between oral proficiency in the second language and second language reading achievement have shown a moderate-to-strong correlation between the two variables (Matluck & Tunmer, 1979; Tregar et al., 1981). Educators have long believed that there is a certain level of oral proficiency in the second language that is necessary to ensure success in learning to read in that language. That level appears to be somewhat nebulous and to have been determined more intuitively than empirically. Goodman and Goodman (1978) have argued that while one cannot read an unknown language, one need not be totally proficient in a second language to gain meaning from print in that language. They maintain that one learns language from using it--reading it, as well as speaking it.

Matluck and Tunmer (1979) have attempted to pinpoint a minimal level of oral proficiency in English that is associated with reading success in English by second language learners in grades 1-6. They have concluded that there is indeed a minimal level of oral proficiency in English a child must attain if she/he is to have even the likelihood of success in reading though the very critical years of third to sixth grades, and that this minimal level of oral proficiency corresponds to the mean score achieved by monolingual English-speaking first-grade

students on a measure of oral proficiency. That, of course, suggests a rather complete knowledge of the basic structures of English.

Level of oral language proficiency in the second language and oral vocabulary knowledge have been shown to be stronger predictors of reading achievement in English than demographic variables related to family class background, education of parents, length of residence, etc. (Rodríguez-Brown & Junker, 1980). Level of second language oral proficiency has also been associated with types of oral reading miscues. For example, less proficient students tend to draw more heavily on graphic information than do more proficient students who make more use of contextual information (Cziko, 1980). Second language oral proficiency has also been associated with the extent to which first language reading skills can be applied to the new language (Clarke, 1979) and with the quality of the recall performance of second language students (Goodman & Goodman, 1978; Reitzel, 1979). Recall performance of less proficient students differed from that of the more proficient students in variety of syntactic patterns used, extent of first language phonological influence in their retelling, and in the content of the recall.

Materials: Cultural Relevance; Text Analysis. Materials for use in English as a Second Language (ESL) and bilingual programs continue to be a concern for educators. The concern is related to both text structure and text content. It is a widely held belief among educators that materials that are relevant to the lives of children facilitate reading growth. Two recent studies have shown that while there were no differences in number of type of miscues between second language learner's performance on "standard" stories and on those selected for cultural relevance, the culturally relevant stories produced higher comprehension scores (Goodman & Goodman, 1978; DuBois, 1979).

Some researchers are working on procedures for determining text difficulty of both English and Spanish materials which are used in

bilingual programs. Their work seems to indicate quite definitely that measures which focus on surface features (e.g., readability formulas, vocabulary load, word frequencies) are not adequate (Evans, 1979; Dearholt, Valdés, & Barrera, 1981). Text analysis which assesses and represents the underlying meaning of the text (deep structure) appears to be more effective in identifying readability levels. Some approaches which have been applied are Propositional Analysis (Kintsch, 1974) and Crother's Paragraph Description (Crothers, 1975).

Knowledge of text structure appears to be a factor in the child's continued success of reading at the higher grades. Calfee (in press) argues that the child learns narrative structure through oral presentation as early as the age of four or five, and that since much of the material used for early reading follows standard story grammars, the student need not learn much about comprehension. At the middle grades, however, the student begins to encounter increasing amounts of expository text. Calfee contends that students need systematic instruction to help them acquire those textual forms. Macha (1979) concurs and reports that discourse structure presents the greatest problems for native English-speaking students at the college level and that non-native speakers list vocabulary and speech along with discourse structure as their greatest problems.

Instructional Practices. Regardless of what educators may know about how to facilitate the acquisition and development of literacy skills in the second language, they must ultimately return to the question, "What is the goal of education, in terms of literacy, for our bilingual populations?". Two areas of research appear to be relevant to this issue.

Fishman (1980) has been studying the role of literacy in English and in the home language of five ethnic groups who are maintaining and encouraging biliteracy in private schools in New York City. These groups are speakers of Hebrew, French, Chinese, Greek, and Armenian. He

has found that all groups learn to read and write both English and the home language and that each language fills a different function for these ethnic groups. For all groups, English is the language of the "outside world," both politically and culturally. It is the language of the world of work, sports, amusement, and entertainment. The ethnic language fills a unique need within the group. For example, Hebrew is used by the Jews for prayers; Greek and Armenian are also religious based. Chinese is intra-community oriented and focuses on materials not available (or desired) in English. French symbolically stands for belles lettres and is considered the highest esthetic expression of western civilization (e.g., cooking, fashion, etiquette). Fishman states that English cannot fill the function of the ethnic language nor vice versa.

The role or function or literacy in the ethnic language within the ethnic community may well be an important factor to consider in planning bilingual programs for language minority students. That role may have implications for the emphasis that is to be placed on ethnic literacy training in the school curriculum. It may also have implications for the content of the materials to be used as well as the methodology through which ethnic literacy is to be taught. It may also ultimately affect how well the children learn to read in the mother tongue.

Another study is presently underway which also examines the development and role of literacy among various populations. It is a large-scale study (Ortiz, 1981) which will attempt to develop a sociolinguistic model of literacy in various societies. A series of historical and contemporary studies of literacy, both in the community and in the schools, will be carried out in six language communities (Cherokee, Yiddish, Navajo, Spanish in northern New Mexico, Guarani, Tonga), each of which has been chosen because of its distinct pattern of functions of literacy and literacy development within the community. The fundamental importance of this study for the education of minority populations lies in the identification and recognition of relevant

sociolinguistic variables that may influence the success of literacy development within those populations.

Different models of bilingual education can be predicted to produce literacy for language minority children where others may not. Skutnabb-Kangas (1981) has investigated different types of proficiency which are developed in various parts of the world, depending on the type of program implemented. She concludes that immersion programs and maintenance programs tend to produce biliteracy. In these programs literacy instruction is provided in both languages until fluency is reached. Isolationist-segregationist programs may produce literacy in the first language and possibly interpersonal communication skills in the second language, depending upon the extent of contact with the second language outside of the school. The greatest deficits appear in submersion programs where second language instruction is not adequate and first language development is left to chance. The so-called transition programs commonly found in the United States are not discussed specifically by Skutnabb-Kangas; however, one may infer from her findings that the extent to which these programs are capable of producing biliteracy depends upon the amount of literacy instruction provided in the home language before the children are exited to an all-English program. The extent to which literacy in English is achieved subsequently by those children may also be related to the extent to which a firm base in the first language is developed, as well as to the adequacy of the literacy instruction in English (see Cummins, 1979, for a discussion of the inter-dependence hypothesis).

Recognizing the need for a national research program for bilingual education in the United States, Title VII, Part C, of the Education Amendments of 1978 called for a coordinated research agenda to be developed. Explicit authority and responsibility for implementing and carrying out such a program of research was given to the Commissioner of Education and the Director of the National Institute of Education. In response to this legislative mandate, the Education Division of the

(then) Department of Health, Education, and Welfare organized an inter-agency committee known as the Part C Coordinating Committee for Bilingual Education. This committee drew up a research agenda whose component studies were organized around three concerns: (1) Assessment of national needs for bilingual education; (2) improvement in the effectiveness of services for students; and (3) improvement in Title VII program management and operations. Subsequently, requests for proposals to carry out these studies were issued by the National Institute of Education. Included in the mandated studies related to improving service effectiveness (number 2 above) were a cluster of studies which are intended to provide information about bilingual instructional practices that can be used in designing better educational programs for students of limited English-speaking ability. The major study is a descriptive study which will identify significant instructional features and their outcomes (Tikunoff, 1980).

Three special studies, intended as complementary to the major study, will provide information to help educators and policy planners understand how bilingual instructional practices operate and how these are related to student and program outcomes. One of the special studies contrasts two instructional approaches believed to affect language learning most greatly in bilingual classes and examines the extent to which other instructional practices and student characteristics interact to affect the outcome of each approach (Wong-Fillmore & Ammon, 1980). Another of the special studies has as its goal to describe and document some of the variation that exists in language and literacy instruction in bilingual programs, and to examine the effects of that instruction on the acquisition of school-related language skills by children who enter school with differing language skills and who speak different languages (Domínguez & Mace-Matluck, 1980). A third study examines the effects of language attitudes of parents, students, and teachers on learning behaviors and instructional features in bilingual classrooms (Hansen, 1980). This set of studies is expected to yield preliminary reports to Congress in the Fall of 1982, with final reports available to researchers and practitioners during the following year. Findings from these studies

should contribute significantly to our understanding of effective means of fostering the literacy development of bilingual students.

INTERFACE OF READING AND WRITING

Learning to write, like learning to read, requires not only the acquisition of new linguistic forms and rules, but a new and expanded way of thinking as well. Cook-Gumperz and Gumperz (1978) state that:

> The move into literacy requires children to make some basic adjustments to the way they socially attribute meaning to the events and processes of the everyday world in order to be able to loosen their dependence upon contextually specific information and to adopt a decontextualized perspective. (p. 99)

Learning to write has been described as a problem of converting a language production system geared to conversation over to a language system capable of functioning by itself (Bereiter & Scardamalia, 1981). It has also been claimed that learning to write is more like learning another language than it is like learning to speak; writing is not "speech written down" nor "talk on paper" (Vygotsky, 1962; Chaika, 1975; Emig, 1977; Kroll, 1979; Cronnell, 1981). By and large, writing involves the use of language in context-reduced situations. Children move toward decontextualization of language as they begin to share their thoughts in writing rather than in talk (Florio & Clark, in press). In their first attempts to write, children try to make their writing like speech, unaware of the lack of context to support their linguistic forms. The crossover from speech to print is a developmental process which can be facilitated by wide exposure to print, opportunity to try (practice), and wise, sensitive guidance by a caring adult (Graves, 1979a, 1979b; Sowers, 1979b; Clark et al., in press; Calkins, 1980; Edelsky, 1981a, 1981b).

It is largely through wide reading, rather than writing alone, that the conventions of writing are acquired, and it is through extensive writing that one becomes aware of the essentials of text structure and

problems of author's perspective when one engages in reading (Dublin & Olshtain, 1980; Graves & Murray, 1980; Edelsky, 1981b; Smith, 1982).

Krashen (1981) draws upon second language acquisition research to explain the role of reading in learning to write. He argues that the individual acquires language by partaking of comprehensible input: The incoming language is examined, and hypotheses and rules are formulated on the basis of that input. Production becomes a result, not a cause, of language acquisition. Krashen points out, however, that comprehensible input is "necessary but not sufficient" in the acquisition of language. Other factors, such as the students' readiness and willingness (or motivation) to learn from the input, may affect acquisition of either the oral or written language.

A number of studies, such as those reviewed below, have shown that good writers will have read more than poor writers, and that progress in learning to write may actually improve reading performance. Graves and Murray (1980) report that children do extensive reading when they reread and revise their own text (emphasis added). In their study, large amounts of time were taken from formal reading instruction in their target classrooms and given over to time for writing. In those classrooms, the reading scores of the children did not go down; they went up significantly.

Evanechko et al. (1974) looked at the relationship among language measures and attempted to predict the reading achievement of sixth grade students on the basis of indices of writing performance. They concluded that:

> . . . the evidence suggests that both reading and writing use certain language skills in common and that the presence of these skills should result in better performance in both reading and writing. (p. 323)

Studies which have looked at the characteristics of good versus poor writers at the high school and college levels have found that good

writers had read more by the time they reached high school (Woodward & Phillips, 1967; Krashen, 1981) and were dedicated readers who read widely on their own (Applebee, 1978). Good writers also planned before writing, wrote longer and at a slower rate than did poor writers, and edited their text in larger segments and for a greater variety of systems (lexicon, syntax, and discourse) than did the poor writers. Poor writers, on the other hand, began writing within the first few minutes after receiving an assignment, wrote more words per minute than did the good writers, attempted editing prematurely, and gave too much attention to editing for "errors" (Stallard, 1974; Perl, 1979; Pianco, 1979).

ANALYSIS OF THE RESEARCH ON WRITING

Various sources document the fact that, over the past several decades, the teaching and learning of writing have received very little attention in schools in this country. The writing that students do in school consists by and large of workbook exercises and drills that focus primarily on mechanics and short-answer writing rather than on the development of fluent writing and of critical writing skills (Graves, 1978; Applebee, 1980; National Assessment of Educational Progress, 1980).

However, the past few years have seen a renewed interest in the improvement of writing skills of children. Since 1978, the National Institute of Education has called for and funded some thirty writing projects aimed at gathering information which would help teachers understand the writing process, the variety of uses for which writing is needed (both in and out of school), and ways in which teachers can best facilitate growth in writing abilities of students. Early indications from these studies, several of which are reported in Humes, Cronnell, Lawlor, and Gentry (1981), suggest that: (1) Recent research in writing is having a clear impact on writing researchers and teacher networks across the country as the grantees report their preliminary results to

enthusiastic audiences at practitioner conferences; (2) the lack of fluent writing activities in the classroom can be attributed, on the one hand, to the amount and kind of writing that presently occur in the instructional program and, on the other, to the inadequacy of teacher preparation in the area; and (3) there are atypical schools and classrooms in which writing of high quality does occur, thus providing an opportunity to learn about the kinds of educational experiences which produce effective writers (Whiteman, 1981).

Prior to the last decade, much of the research focused on forms of writing, rather than on how people learn to write. Recently, the emphasis in writing research has been on understanding how the critical elements of fluent writing are acquired and how best to facilitate writing development through teaching. From these more recent studies a number of assumptions can be made.

First of all, extensive reading, as indicated in the preceding section of this paper, appears to contribute to the acquisition and development of fluent writing. Availability of reading materials in the home and interest in reading and writing have also been shown to be related to the development of writing (Woodward & Phillips, 1967). Similarly, voluntary reading, as opposed to assigned reading, has been associated with successful writers (Applebee, 1978).

Secondly, instruction helps. Whiteman (1981) points out that "writing is more effectively taught, and therefore learned, when teachers focus more on writing processes, than on written products..." (p. 4). Bamberg (1978) reviewed a number of studies from composition research and summarized findings from these studies as follows:

(1) The teaching of formal grammar (either traditional or transformational) has no effect on the improvement of writing achievement; however, functional or applied grammar instruction based on student errors was shown to improve some aspects of writing significantly.

(2) Increasing the frequency of writing only and intensifying teacher evaluation, each separately and in combination, have not been shown to produce significant results.

(3) Guided revision with increased frequency produce significant results; "the revision process itself, which gives students the opportunity to make immediate application of suggestions for improvement, is critical in improving student writing" (p. 4).

(4) Instructional procedures which help students generate, develop, and organize ideas during the prewriting or writing period, can assist students in becoming more effective writers.

Thirdly, practice helps. At the high school level, high-achieving students have been shown to write more frequently in non-traditional elective courses, with less emphasis on literary topics, than do their low-achieving counterparts (Applebee, 1978). The amount of writing required in high school, along with instruction in expository writing, has been shown to distinguish students at the college level (McQueen et al., 1963; Bamberg, 1978).

Finally, the teacher plays a very special role in the development of writing skills. As seen by various scholars (Graves, 1979a, 1979b; Florio & Clark, 1980; Clark et al., in press; Edelsky, 1981b) a number of context variables influence students' writing development: (1) Writing develops best in situations where the written language is used for actual communication, rather than for display or evaluation by the teacher; (2) the role of the teacher (or parent) is one of monitoring the student's attempt to write, noting what aspects of the writing process are standing in the way, and providing guidance as needed; and (3) the role of the teacher also involves organizing the school day and structuring experiences in such a way that many opportunities are provided for the students to practice their writing skills in meaningful written communication. In addition, Sowers (1979b) suggests that the teacher should allow the children to choose their own topics for writing, grant them permission to experiment and make errors, and construct a classroom environment where children can move about, talk, and draw while planning and producing their written text.

Research on Writing Development in Bilingual Settings. Research on the development of writing in bilingual settings is extremely limited. That which does exist on bilingual populations in this country suggests that, as in reading, bilingual children learn to write in much the same way as do monolingual children. Edelsky's (1981a; 1981b) work with children in grades one through three in a Spanish-English bilingual program in the Southwest provides invaluable insights into the writing development of bilingual children. From the results of this study so far, a number of interesting observations can be noted. For example, young bilingual writers are sensitive to differences between oral and written language. The instances of code-switching are considerably less frequent in the written text of the children than in their oral production. Similarly, the children tend to end their written, but not oral, texts with verbal signals of closing. They also distinguished among different genres of text through use of formulaic expressions typical of the written forms of those genres (e.g., once upon a time for narratives; today is . . . for first entries into journals).

Evidence from the study suggests quite strongly that writing is a developmental process, that children proceed through a "creative construction" process in which, drawing upon their previous input, they formulate hypotheses and rules and gradually bring their written language closer and closer to the adult model of written text. They draw upon their knowledge of the oral language to assist them in writing; they use the syntactic patterns that they know, and they invent spellings which are consistent with oral language. The invented spellings of the children appear to be affected by (1) the nature of the language, e.g., prevalence of vowel inventions in English, while more consonant inventions occurred in Spanish; (2) amount of previous phonics instruction; and (3) the relative amount of input in each language. The children tend to apply the graphophonic system of their stronger language to their weaker language in their inverted spellings. There is considerable evidence from the study also that the writing of bilingual

children is a single, not a dual, process. They apply what knowledge they have of the conventions of writing (e.g., segmentation, spelling, punctuation), of text structure, and of general strategies and processes in both languages. They also maintain their personal style when producing text in each language.

As in reading, the children's relative degree of proficiency in the second language influences the strategies they use and the quality of the written product. Edelsky (1981a) has found that when writing in their weaker language, some children tend to use less complex syntactic structures than they do in their stronger language, and they revert to their previously learned manuscript writing rather than writing in their more recently learned cursive writing. Similarly, others working with monolingual children have found that when a task is cognitively-demanding (i.e., attempting a new approach to writing or trying to solve a new problem in writing), their syntax and mechanics may not meet previous standards of correctness or logic (Graves, 1979a; Sowers, 1979a, 1979b).

In summary, learning to read and write requires the development of language and thought which moves beyond the bounds of meaningful interpersonal communication, supported by its contextual and paralinguistic cues. In the acquisition of literacy, the child learns to assign meaning to the linguistic forms per se and is made conscious of the processes by which language can be controlled and manipulated to gain knowledge and to apply that knowledge in a variety of academic and social contexts. Learning to decontextualize language is initially a cognitively-demanding task for all children. For children whose stronger language is not English, initial literacy instruction in their mother tongue, a language in which the basic linguistic tools have been mastered, may well provide the needed basis for gaining literacy in English.

The role of the teacher in the acquisition of literacy is an important one. Whatever else the teacher might profitably do, the research seems to be saying: Provide the children with many opportunities to read and write, encourage them in their efforts, and be a knowledgeable and empathetic observer, willing and able to provide guidance and assistance as needed.

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